

عنوان مقاله:

High fat diets alter aerobic exercise and L-arginine effects in ischemia reperfusion induced renal injury in rats: gender related difference

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خلاصه مقاله:

Introduction: Renal ischemia reperfusion (I/R) caused kidney injury gender dependently. High fat diet (HFD) contributes the development of renal dysfunction. L-arginine (L-arg) and regular exercise are recognized to be protective in I/R and lipotoxicity. We compared the role of aerobic exercise and L-arg supplementation against renal I/R in male and female rats fed with HFD. **Methods:** 54 adult male and female Wistar rats received standard control diet (control), HFD, HFD plus L-arg (HFD±L-arg) or HFD plus aerobic exercise (HFD±EX) for 8 weeks. Then the animals were subjected to renal I/R by clamping renal vessels for period of 45 min followed by 24 hour reperfusion. **Results:** The serum levels of blood urea nitrogen (BUN) and creatinine (Cr), and kidney tissue damage score (KTDS) were not significantly different between HFD and control groups in two genders. However, the serum level of nitrite and kidney tissue level of malondialdehyde (MDA) in HFD fed male rats increased significantly ($P < 0.05$). Also, kidney weight (KW) had significant decrement in HFD groups in comparison with control groups in two genders ($P < 0.05$). L-arg and aerobic exercise decreased the BUN levels and KTDS in male rats after renal I/R ($P < 0.05$), but such observations were not seen in female. **Conclusion:** These results indicated that L-arg and aerobic exercise could ameliorate renal I/R induced kidney injury in HFD male rats but not in female.

کلمات کلیدی:

Renal Ischemia Reperfusion, High Fat Diet, L-arginin, Aerobic Exercise

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